

AMENDMENTS TO THE CLAIMS:

Claim 1. (currently amended): A server for use in a system which provides information to a user terminal, said server comprising:

a database for retaining a plurality of pieces of bubble data, each of the bubble data pieces including:

a piece of spatial range information, which specifies a spatial range in a space,  
and

a piece of retrieval information, which is associated with the spatial range information piece and is linked to a piece of service information;

an extracting section, responsive to a piece of positional information transmitted from the user terminal, for retrieving from said database a spatial range information piece whose spatial range includes a position that accords with the positional information piece, and extracting a retrieval information piece associated with the retrieved spatial range information piece from said database; and

a providing section for providing the user terminal with a service information piece linked with the retrieval information extracted by said extracting section.

~~a database for retaining bubble data in which spatial range information in a three-dimensional space is associated with retrieval information for obtaining service information to be provided;~~

~~an extracting section for extracting, on the basis of positional information transmitted from said user terminal, specified retrieval information corresponding to specified spatial range information including said positional information, of said spatial range information retained in said database; and~~

~~a providing section for providing, to said user terminal, specified service information corresponding to said specified retrieval information extracted in said extracting section.~~

Claim 2. (currently amended): A server for use in a system which provides information to a user terminal, said server comprising:

a database for retaining a plurality of pieces of bubble data, each of the bubble data pieces including:

a piece of spatial range information, which specifies a spatial range in a space and includes a latitude of an object, a longitude thereof, an altitude thereof and a bubble diameter thereof in the space, and

an address associated with the spatial range information piece and linked to a piece of service information relating to the object;

an extracting section, responsive to a piece of positional information that is transmitted from the user terminal and includes a latitude of the user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof, for retrieving from said database a spatial range information piece whose spatial range includes a position that accords with the positional information piece, and extracting an address associated with the retrieved spatial range information from said database; and

a providing section for providing the user terminal with a service information piece linked with the address extracted by said extracting section.

~~a database for retaining bubble data in which spatial range information including a latitude of an object, a longitude thereof, an altitude thereof and a bubble diameter thereof in a~~

~~three dimensional space is associated with an address for acquiring assorted information related to said object or service information related to said assorted information;~~

~~an extracting section for extracting, on the basis of positional information including a latitude of said user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof transmitted from said user terminal, a specified address corresponding to specified spatial range information including said positional information, of said spatial range information retained in said database; and~~

~~a providing section for providing, to said user terminal, specified service information corresponding to said specified address extracted in said extracting section.~~

Claim 3. (currently amended): A server for use in a system which provides information to a user terminal, said server comprising:

a database for retaining a plurality of pieces of bubble data, each of the plural bubble data pieces including:

a piece of spatial range information, which specifies a spatial range in a space and includes a latitude of a building, a longitude thereof, an altitude thereof and a bubble diameter thereof in the space, and

a uniform resource locator, which is associated with the spatial range information piece and is linked to a piece of service information related to the facility;

an extracting section, responsive to a piece of positional information that is transmitted from the user terminal and includes a latitude of the user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof, for retrieving from said database a spatial range information piece whose spatial range includes a position that accords with the

positional information piece, and extracting a uniform resource locator associated with the retrieved bubble data piece from said database; and

a providing section for providing the user terminal with a service information piece linked with the uniform resource locator extracted by said extracting section.

~~a database for retaining bubble data in which spatial range information including a latitude of a building, a longitude thereof, an altitude thereof and a bubble diameter thereof in a three dimensional space is associated with a uniform resource locator for acquiring facility information related to said building or service information related to said facility information;~~

~~an extracting section for extracting, on the basis of positional information including a latitude of said user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof transmitted from said user terminal, a specified uniform resource locator corresponding to specified bubble data including said positional information, of said bubble data retained in said database; and~~

~~a providing section for providing, to said user terminal, specified service information corresponding to said specified uniform resource locator extracted in said extracting section.~~

Claim 4. (original): A server according to claim 3, further comprising a web information outputting section for holding user information and an address generating section for generating an address retaining said user information held in said web information output section.

Claim 5. (currently amended): A server for use in a system which provides information to a user terminal, said server comprising:

a database for retaining a plurality of pieces of bubble data, each of the bubble data

pieces including:

a piece of spatial range information, which specifies a spatial range in a space and includes a latitude of a target, a longitude thereof, an altitude thereof and a bubble diameter thereof in the space, and

an address associated with the spatial range information piece and linked to a piece of message information retained in a range of the bubble diameter;

an extracting section, responsive to a piece of positional information that is transmitted from said user terminal and includes a latitude of said user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof, for retrieving from said database a spatial range information piece whose spatial range includes a position that accords with the positional information piece, and extracting a message information piece associated with the retrieved bubble data piece from said database; and

a providing section for providing the user terminal with the message information extracted by said extracting section.

~~a database for retaining bubble data in which spatial range information including a latitude of a target, a longitude thereof, an altitude thereof and a bubble diameter thereof in a three-dimensional space is associated with an message information retaining address established in a range of said bubble diameter;~~

~~an extracting section for extracting message information retained in said database on the basis of positional information including a latitude of said user terminal, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof transmitted from said user terminal; and~~

~~a providing section for providing, to said user terminal, said message information~~

~~extracted in said extracting section.~~

Claim 6.(original): A server according to claim 1, wherein said database sets an address based on said spatial range information as an electronic mail address, and retains said spatial range information in corresponding relation to said electronic mail address.

Claim 7.(original): A server according to claim 1, wherein said database retains, as said bubble data, service information on a public transportation terminal and information on transportation time.

Claim 8.(original): A server according to claim 7, wherein said database updates said information on transportation time according to the present time.

Claim 9. (currently amended): A server according to claim [[1]] 2, wherein said database is designed to sequentially update said bubble diameter of said bubble data on the basis of said positional information transmitted from a moving object.

Claim 10. (canceled)

Claim 11. (original): A user terminal for use in a system which provides information to said user terminal, said user terminal comprising:

a detecting section for detecting positional information including a latitude of an object, a longitude thereof, an altitude thereof, a direction thereof and an inclination angle thereof;

a transmitting section for transmitting said positional information, detected in said detecting section, to a server;

a receiving section for receiving, in connection with said positional information transmitted from said transmitting section, specified service information corresponding to specified spatial range information including said positional information, of spatial range information comprising a latitude of an object, a longitude thereof, an altitude thereof and a bubble diameter thereof in a three-dimensional space transmitted from said server; and

a displaying section for displaying said specified service information received in said receiving section.

Claims 12-14. (canceled)

Claim 15. (currently amended): A user terminal ~~according to claim 10, further comprising~~  
for use in a system which provides information to said user terminal, said user terminal  
comprising:

a detecting section for detecting a piece of positional information about an object;

a transmitting section for transmitting said positional information piece detected in said  
detecting section to a server;

a receiving section for receiving a piece of service information transmitted from said  
server in response to the positional information from said transmitting section, the service

information piece being associated with a spatial range information, which specifies a spatial range including a position according with the positional information in a space;

a displaying section for displaying the service information received by said receiving section;

a housing containing said detecting section, said transmitting section, said receiving section, and said displaying section; and

a hand-in-use discriminating section for judging whether a user's hand being used is the right hand or the left hand by detecting the number of fingers touching on each of the right and left sides of said housing of said user terminal to make a decision on a hand of a user being used;

wherein said hand-in-use discriminating section judges the user's hand is the right hand when four fingers are detected on the left side of said housing and one finger is detected on the right side of said housing as facing said displaying section, and judges the user's hand is the left hand when one finger is detected on the left side of said housing and four fingers are detected on the right side of said housing as facing said displaying section.

Claim 16. (currently amended): A user terminal ~~according to claim 10, further comprising~~  
for use in a system which provides information to said user terminal, said user terminal comprising:

a detecting section for detecting a piece of positional information about an object;

a transmitting section for transmitting said positional information piece detected in said detecting section to a server;

a receiving section for receiving a piece of service information transmitted from said server in response to the positional information from said transmitting section, the service



information piece being associated with a spatial range information, which specifies a spatial range including a position according with the positional information in a space;

a displaying section for displaying the service information received by said receiving section; and

a voice guide section for conducting a guide using a speech file to a place relating to the for said specified service information, received in by said receiving section, through the use of a speech file.

Claim 17. (currently amended): An information providing service system which has a server and a user terminal and provides information from said server to a said user terminal, said system comprising:

said server comprising

a database for retaining a plurality of pieces of bubble data, each of the bubble data pieces having a piece of spatial range information, which specifies a spatial range in a space, and

a piece of retrieval information, which is associated with the spatial range information piece and is linked to a piece of service information,

an extracting section, responsive to a piece of positional information transmitted from the user terminal, for retrieving from said database a spatial range information piece whose spatial range includes a position that accords with the positional information piece, and extracting a retrieval information piece associated with the retrieved spatial range information piece from said database, and

a providing section for providing the user terminal with a service information piece linked with the retrieval information extracted by said extracting section;

said user terminal comprising

a detecting section for detecting a piece of positional information about an object,

a transmitting section for transmitting said positional information piece detected

in said detecting section to a server,

a receiving section for receiving the service information piece transmitted from

said server in response to the positional information from said transmitting section, and

a displaying section for displaying the service information received by said

receiving section.

~~a server for retaining bubble data in which spatial range information including a latitude of an object, a longitude thereof, an altitude thereof and a bubble diameter thereof in a three-dimensional space is associated with an address holding assorted information related to said object or service information related to said assorted information; and~~

~~a user terminal connected through a network to said server for displaying said assorted information retrieved through the use of said bubble data,~~

~~said server including:~~

~~a database for retaining bubble data in which said spatial range information is associated with retrieval information for retrieving service information to be provided;~~

~~an extracting section for extracting, on the basis of positional information transmitted from said user terminal, specified retrieval information corresponding to specified spatial range information containing said positional information, of the spatial range information retained in the database; and~~

~~a providing section for providing, to said user terminal, specified service information corresponding to said specified retrieval information extracted in said extracting~~

section;

said user terminal including:

~~a detecting section for detecting said positional information;~~

~~a transmitting section for transmitting said positional information detected in said detecting section to said server;~~

~~a receiving section for receiving said specified service information retained in said server in connection with said positional information transmitted from said transmitting section; and~~

~~a displaying section for displaying said service information received in said receiving section.~~

Claim 18. (currently amended): An information providing service system according to claim 17, wherein said transmitting section transmits, to said server, a user's viewing direction detected on the basis of an inclination angle of said user terminal with respect to ~~the~~ a horizontal line, while said server retrieves a desired subject on the basis of said viewing direction.

Claim 19. (currently amended): An information providing service method for use in a system which has a server and a terminal and provides information from said server to a said user terminal, wherein said server includes a database for retaining a plurality of pieces of bubble data, each of the bubble data pieces having a piece of spatial range information, which specifies a spatial range in a space, and a piece of retrieval information, which is associated with the spatial range information piece and is linked to a piece of service information, said method comprising:

a measuring step in which said user terminal measures positional information including

its own latitude, longitude, altitude, direction and inclination angle;

a measured information transmitting step in which said user terminal transmits; to a said server; said positional information measured in said measuring step and a retrieval condition;

a retrieving step in which ~~said server retrieves, on the basis of~~ responsive to said positional information transmitted in said measured information transmitting step, ~~a plurality of specified~~ said server retrieves from said database a service information piece whose spatial range includes a position that accords with the positional information piece, and extracts a retrieval information piece associated with the retrieved spatial range information piece from said database from a plurality of bubble data in which spatial range information including a latitude of an object, a longitude thereof, an altitude thereof and a bubble diameter thereof in a three-dimensional space is associated with assorted information related to said object or an address for obtaining service information related to said assorted information; and

a retrieval result notifying step in which said server notifies said user terminal of ~~said plurality of specified~~ the service information retrieved ~~extracted~~ in said retrieving step.

Claim 20. (currently amended): An information providing service method according to claim 19, wherein said retrieving step includes:

an extracting step of extracting a second information bubble from a plurality of information bubbles representative of images of spatial occupancy information of bubble data ~~according to a first condition~~ on the basis of said positional information and said spatial range information of said bubble data;

an address extracting step of selecting a third information bubble from said second information bubble, extracted in said extracting step, ~~according to a second condition and of for~~

extracting a uniform resource locator corresponding to said third information bubble; and  
a selecting step of selecting and outputting said specified service information  
corresponding to said uniform resource locator extracted in said address extracting step.

Claim 21. (original): An information providing service method according to claim 20,  
wherein, in said retrieving step, an intersection information bubble intersecting a retrieval vector  
representative of a direction of said user terminal toward a subject to be retrieved is extracted as  
said second information bubble from said plurality of information bubbles.

Claim 22. (original): An information providing service method according to claim 21,  
wherein said extracting step is made to extract a bubble, positioned in a direction of the retrieval  
vector, as said second information bubble from said plurality of information bubbles, and said  
selecting step is made to output all said second information bubbles.

Claim 23.(original): An information providing service method according to claim 22,  
wherein said selecting step is made to output, of said second information bubble, a bubble  
existing in a predetermined range.

Claim 24.(original): An information providing service method according to claim 21,  
wherein said extracting step is made to extract, as said second information bubble, the first  
visible object of objects in a direction said user terminal takes, through the use of map data.

Claim 25.(original): An information providing service method according to claim 21, wherein said extracting step is made to extract said second information bubble taking configuration and location of a subject to be retrieved into consideration.

Claim 26.(original): An information providing service method according to claim 19, further comprising, after said retrieval result notifying step, a selected information transmitting step in which said user terminal transmits, of said plurality of specified service information notified in said retrieval result notifying step, service information selected by a user to said server and a displaying step in which said user terminal displays said service information selected in said selected information transmitting step.

Claim 27.(original): An information providing service method for use in a system which provides information to a user terminal, said method comprising:

a measuring step in which said user terminal measures positional information including its own latitude, longitude, altitude, direction and inclination angle;

a measured information transmitting step in which said user terminal transmits said positional information, measured in said measuring step, to a server; and

a registering step in which said server writes, in a database, said positional information transmitted in said information transmitting step and information on a subject to be retrieved.

Claim 28.(original): An information providing service method according to claim 27, wherein said measuring step is made such that said user terminal is aligned with an information

presenting tower forming said subject to be retrieved, and said information transmitting step is made to transmit a desired message inputted by a user.

Claim 29.(original): An information providing service method according to claim 19, wherein said retrieval result notifying step is made to give, to a user, information including characters, images or voice on a subject to be retrieved.

Claim 30.(original): An information providing service method for use in a system which provides information to a user terminal, said method comprising:

a map information acquiring step in which a communication terminal acquires map information;

a service providing place selecting step in which said communication terminal selects a desired service providing place from said map information acquired in said map information acquiring step; and

a generating step in which a server connected through a network to said communication terminal generates bubble data in association with said place selected in said service providing place selecting step.

Claim 31. (currently amended): A server for a system according to claim 1, wherein said piece of spatial range information, which specifies a spatial range in a two-dimensional space ~~which provides information to a user terminal, said server comprising:~~

~~a database for retaining bubble data in which region range information in a two-dimensional space is associated with retrieval information for obtaining service information to be~~

provided;

~~an extracting section for extracting, on the basis of positional information transmitted from said portable terminal, specified retrieval information corresponding to specified region range information including said positional information, of said region range information retained in said database; and~~

~~a providing section for providing, to said portable terminal, specified service information corresponding to said specified retrieval information extracted in said extracting section.~~

Claim 32. (new): A server for a system according to claim 1, wherein said piece of spatial range information, which specifies a spatial range in a three-dimensional space.